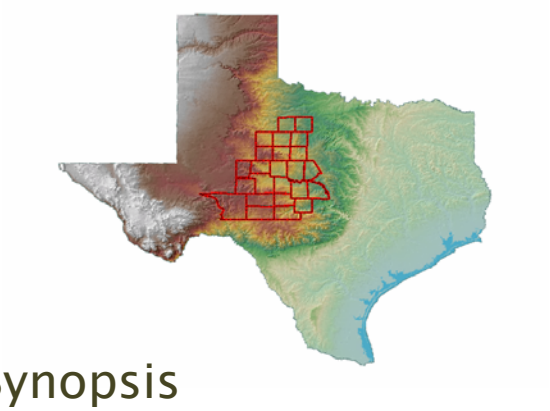
DROUGHT INFORMATION STATEMENT
WFO SAN ANGELO, TX
ISSUED: SEPTEMBER 21, 2006

West Central Texas



Synopsis

Since late August, west central Texas has received much needed rainfall. Northwest flow aloft has encouraged several fronts to move into Texas. In the last 30 days, many areas across the central and western Big Country have received over five inches of rain (Figure 1). Isolated areas south of the Big Country have also received over five inches of rain. Most areas across the region have received widespread two to four inches of rainfall in the last 30 days. Furthermore, most of the region has experienced relief from high temperatures due to the recent moisture. The most notable benefits from the moisture have been to our agricultural resources.

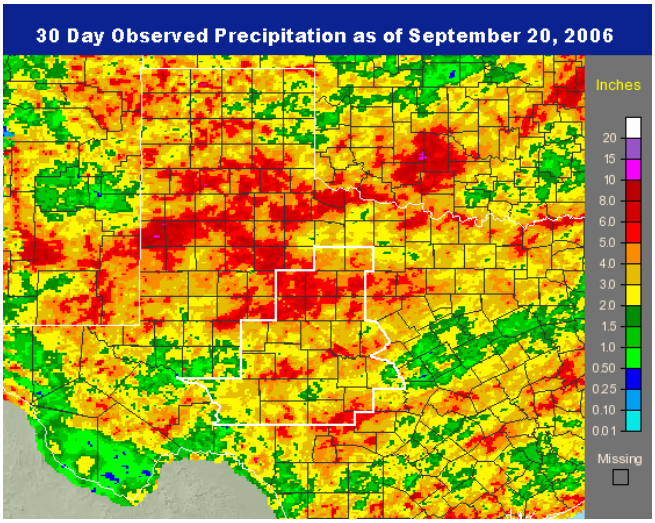


Figure 1 - Total Observed Rainfall August 22 - September 20.

As shown in Figure 2, the U.S. Drought Monitor (USDM), issued through the National Drought Mitigation Center on September 19, shows extreme drought condition impacting most of the Heartland and Northwest Hill Country. The USDM shows moderate drought conditions over the western half of the Big Country and extreme western edge of the Concho Valley and depicts severe drought continuing across the remainder of the Big Country, Concho Valley and Northern Edwards Plateau. The recent rains have made considerable contributions to agricultural resources across the region. Improvements to the agricultural conditions are being reflected in the USDM.

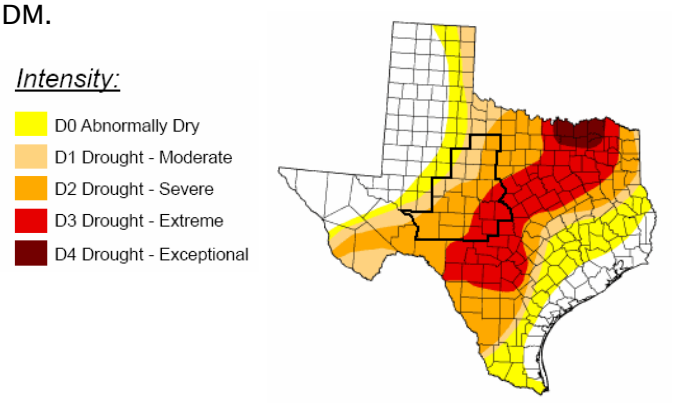


Figure 2 - September 19, U.S. Drought Monitor

The U.S. Drought Monitor is a comprehensive drought monitoring effort between government and academic partners. It is issued each Thursday morning and incorporates hydrometeorological data through 6 AM Tuesday.

Hydrologic Impacts

Periods of localized heavy rainfall during the last 30 days produced minor rises in creeks and rivers across the region. While providing short term relief in these areas, most of the creeks and rivers across the region continue to report below normal flows for this time of the year. Only minor amounts of runoff were delivered into the area lakes. Mostly, the precipitation has been soaked

into the ground helping to replenish the soil moisture profile.

Reservoir conditions as of September 20, 2006, are presented in the following table.

Reservoir	Current Elevation (ft)	Current Capacity (ac-ft)	% Full
Fort Phantom Hill	1628.20	44,200	63
Lake Stamford	1413.54	36,760	71
Hubbard Creek	1169.90	163,070	51
Hords Creek	1892.71	5,030	62
Lake Brownwood	1419.32	99,840	76
E.V. Spence	1849.63	76,860	15
O.C. Fisher	1868.40	8,890	7
O.H. Ivie	1530.15	238,400	43
Twin Buttes	1909.80	41,080	22
Lake Nasworthy	1871.41	8,960	89

According to Texas Commission on Environmental Quality (TCEQ), there are at least 12 public water supply systems affected by water use restrictions across West Central Texas. Figure 3 shows all locations of affected systems across Texas.

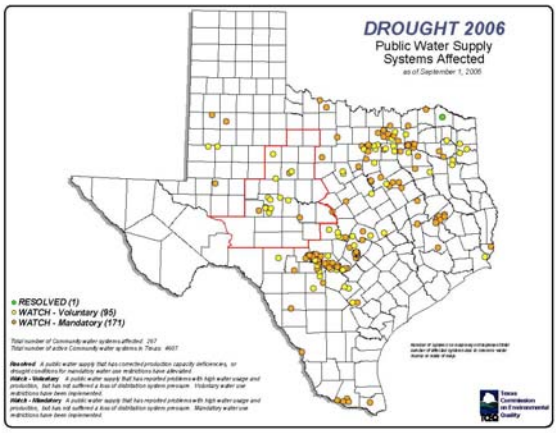


Figure 3 - Water Systems Under Water Use Restrictions as of September 1, 2006.

Fire Danger Impacts

With the recent return of moisture, many counties are experiencing short term relief from fire danger. While several counties have lifted their burn bans, the threat of fires continues to be a real concern across the area.

As of September 21, at least 14 counties across west central Texas continue to support county wide outdoor burn bans.

The Texas Forest Service uses the Keetch-Byram Drought Index (KBDI) as a system for relating current and recent weather conditions to potential or expected fire behavior. It is a numerical index calculated daily for each county. The index ranges from 0 to 800, with 0 representing a saturated soil and 800 a completely dry soil. As of September 20, the KBDI shows that the eastern half of the Big Country down to the eastern half of the Hill Country falls within the 500 to 600 range. In this range, fires will burn to mineral soil. Stumps will burn to the end of underground roots and spotting will be a major problem. Fires will burn through the night and heavier fuels will actively burn and contribute to fire intensity. The western half of the region falls within the 300 to 500 range.

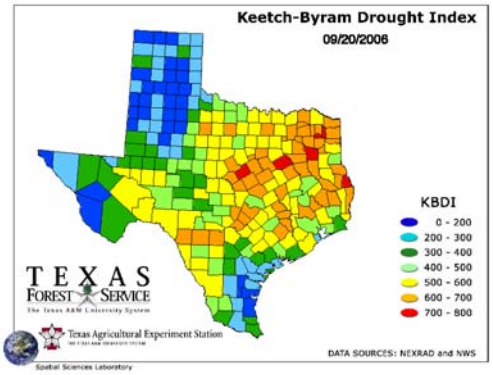


Figure 4 - KBDI Map, September 20

The Texas Forest Service advises to watch out for key weather thresholds of winds above 15 mph and relative humidity below 25 percent. When these thresholds are exceeded, expect the fire danger to be elevated.

Agricultural Impacts

The eastern half of the region continues to lack a considerable amount of soil moisture. The Climate Prediction Center analyzes the percent of available soil moisture as compared to normal. As of September 20, the available soil moisture ranges from 70 percent of normal along the western half of the area to 30

percent of normal across the eastern half of the region (Figure 5). The soil moisture deficit across eastern portions of the area is as much as 60 mm or around 2.4 inches below normal.

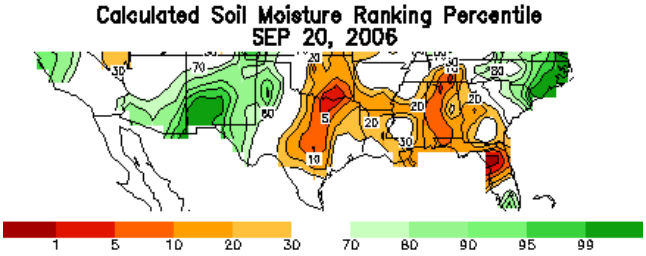


Figure 5 - Available Soil Moisture, September 20

The Crop Moisture Index monitors short term moisture conditions across major crop producing regions. The index is not used for monitoring extended drought conditions. The Crop Moisture Index issued by the Climate Prediction Center on September 16, indicates that short term conditions range from slightly dry to favorably moist across the area.

According to the Texas Crop Weather Report issued on September 12, from the Texas A&M Agriculture Program, the following agricultural impacts were noted across West Central Texas:

- Soil moisture is improving.
- Small grain fields were being sown as fields dried or were being prepared for planting.
- Some late hay fields were starting to grow.
- Rangeland conditions are improving.
- Bermuda grass fields are rapidly growing and producers will get another cutting before end of growing season.
- More runoff is needed to fill livestock tanks.
- Supplemental feeding of livestock continues as well as liquidation of some herds.

Outlook

The Climate Prediction Center outlook for October through December indicates that there is an increased chance for warmer than normal temperatures across Texas (Figure 6). The precipitation outlook for West Central Texas shows enhanced chances for above normal rainfall through December (Figure 7). These outlooks are considering the El Niño conditions developing across the Equatorial Pacific.

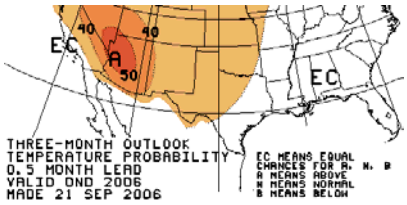


Figure 6 - Temperature Outlook

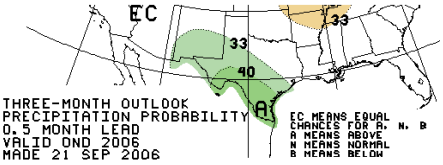


Figure 7 - Precipitation Outlook

As shown in Figure 8, the latest U.S. Seasonal Drought Outlook through December shows that drought conditions across west central Texas are likely to improve. According to the Climate Prediction Center, the onset of El Niño conditions, which should continue through winter, increases the odds for wetness across the southern tier of the U.S. While conditions are expected to improve across Texas, this does not necessarily translate into drought elimination. With low water supplies affecting many areas, it could take a long time and a lot of precipitation to end the drought completely.

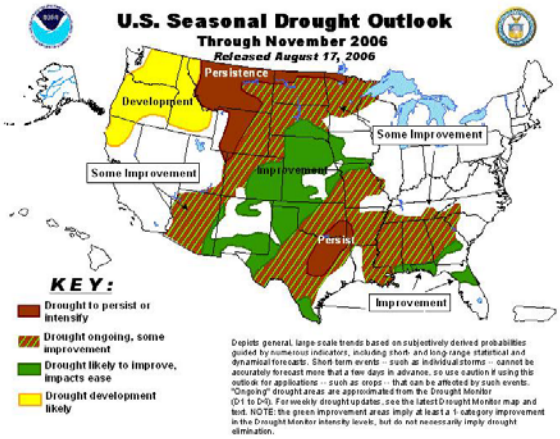


Figure 8 - Seasonal Drought Outlook

Drought Related Links:

The U.S. Drought Monitor:
http://www.drought.unl.edu/dm

The USGS WaterWatch:
http://water.usgs.gov/waterwatch

TCEQ Map of Water Systems under Water Use Restriction
http://www.tceq.state.tx.us/nav/util_water/drought.html

The Texas Counties Burn Ban Map:
http://www.tamu.edu/ticc

The KDBI County Average Map:
http://webgis.tamu.edu/tfs/kbdi_daily/kbdicounty.png

CPC Soil Moisture:
http://www.cpc.ncep.noaa.gov/soilmst/w.shtml

Texas AgNews:
http://agnews.tamu.edu/index.html

CPC Outlook Maps:
http://www.cpc.ncep.noaa.gov/products/forecasts/

CPC U.S. Seasonal Drought Outlook:
http://www.cpc.ncep.noaa.gov/products/expert_assessment/seasonal_drought.html